

FROM : ANDREW E PIERCE PATENT ATTY

FAX NO. : 8649720360

May. 26 2006 01:30PM P2

**FC-10 IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Applicant: Jackson et al.

Examiner: WILKINS, III, H.D.

Serial No.: 10/601,602

Group Art Unit: 1742

Filing Date: June 23, 2003

For: Low Energy Chlorate Electrolytic Cell and Process

Assistant Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AFFIDAVIT UNDER 37 CFR 1.132

State of South Carolina

County of Richland

John Robert Jackson being a graduate of Queens University, Kingston, Ontario, Canada with a degree in Chemical Engineering, having about 28 years of experience in the field of electrochemistry as a Research Chemist and Research Manager, presently employed with the Applicant's Assignee, Kemira Finnchem USA, Inc. in Eastover, South Carolina and an inventor in the above identified patent application, being duly sworn, deposes and says that he is informed and therefore believes and avers:

*Technical
Development
SES
May 26/06*

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That the Examiner in the above-identified patent application has twice rejected the applicants' claims 8 - 17 as failing to comply with the enablement requirement of 35 USC 112, first paragraph, which reads in pertinent part as follows:

"The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains or with which it is most nearly connected, to make and use the same..." (emphasis added)

That as can be seen from an inspection of pending claims 8 - 17, the invention claimed in the above-identified application which must be described in the specification in accordance with the above quoted statement is an "assembly" which includes as a component thereof a low alkali metal ion transport efficiency permselective polymer membrane. The applicants' invention is NOT the permselective polymer membrane, which is merely a component of the assembly. Since the polymer membrane is commercially available, one skilled in this art could make the assembly of the invention without a disclosure by the applicants of how to make the polymer membrane used in the assembly.

That the above-identified patent application on page 14, first paragraph, would be considered by one skilled in this art to be merely a generic disclosure of a permselective polymer membrane, for instance, those sold under the tradename Nafion. Since such membranes for use in electrolytic cells to separate anode and cathode compartments of chlor-alkali cell have high transport efficiency for alkali metal ions of the order of 92 - 96 %, modification of this membrane base to provide

the required low alkali metal ion transport efficiency permselective polymer membrane component of the claimed assembly is necessary to provide the desired properties. A useful species of a Nafion membrane is identified as Nafion 551 in Example 10 of the above-identified patent application.

That Nafion is a tradename for a series of Teflon polymers modified to have ionic properties which constitutes a new class of polymers termed "ionomers". The ionic properties of these ionomers are created by the addition of sulfonic acid or other groups into the bulk polymer matrix.

That one skilled in this art would not, upon reading the applicants' patent application consider that ALL Nafion membranes would have the required low alkali metal ion transport efficiency properties in view of the wide diversity of polymer membranes and materials available under this tradename, for instance:

1. Polymer membranes of perfluorosulfonic acid sold under the tradename Nafion 112, 1135, 115, and 117.

2. Polymer membranes of perfluorosulfonic acid reinforced with Teflon fiber in the Nafion series 300, 400, and 900, specifically, Nafion 324, 350, 424, and 961.

3. Polymers in powder, pellet, and dispersion form of perfluorosulfonic acid polymers which are sold under the tradenames Nafion NR 50 and SAC - 113.

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That Nafion 551 disclosed in the applicants' patent application, Example 10, as useful, is an example of a perfluorosulfonic acid polymer further modified to have the desired low alkali metal ion transport efficiency properties by the addition of Teflon fibers to a base perfluorosulfonic acid polymer so as to produce the useful membrane component of the applicants' claimed assembly. Membranes sold, for example, under the tradenames Nafion 112, 1135, 115, and 117 being unmodified by the addition of Teflon fibers would not have the desired properties of low alkali metal ion transport efficiency; instead, these membranes are characterized by high alkali metal ion transport efficiency.


That a series of useful perfluorosulfonic acid polymer membranes can be prepared by modification with various amounts of Teflon fibers so as to obtain the low alkali metal ion transport efficiency required, as set forth in the applicants' pending claims 8 - 17.

FURTHER, affiant saith not.


Affiant

Sworn to and subscribed to before me, a notary public on this 26 day of May 2006.

(Seal)


Notary

Commission expires 8-5-08